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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,386	11/21/2003	Satoru Miyauchi	43521-1400	2574
21611 7590 10/04/2007 SNELL & WILMER LLP (OC) 600 ANTON BOULEVARD SUITE 1400 COSTA MESA, CA 92626			EXAMINER CHENG, JACQUELINE	
			ART UNIT 3768	PAPER NUMBER
			MAIL DATE 10/04/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/719,386

Applicant(s)

MIYAUCHI, SATORU

Examiner

Jacqueline Cheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments, see pgs 6-9, filed May 29, 2007, with respect to the rejection(s) of claim(s) 1-12 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kjaer.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 5-8, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kjaer (*Regional cerebral blood flow during light sleep-a H<sub>2</sub><sup>15</sup>O-PET study*). Kjaer discloses a study in which signals of a patient's cerebral blood flow are recorded during a waking stage and a sleeping stage. Scans are taken while a patient is awake and then also when a patient was in stage-1 sleep. The signals from these two predetermined waking and sleeping state were then compared (taking a differential of change) to determine the portions of the brain that function in the sleeping stage versus the awake stage (pg. 202 col. 2 line 1-3, 5<sup>th</sup> full paragraph, last paragraph, pg. 203, col. 2 2<sup>nd</sup> paragraph under Discussion). An EEG is also recorded during the entire experiment (pg. 202 col. 1 last sentence of paragraph 4). Although in the study of Kjaer, a

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PET scan was used, it would be obvious to one skilled in the art to use any type of imaging system that can record cerebral blood flow such as an MRI system (see paragraph 0009 of US 2005/0154290 A1 to Langleben).

4. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kjaer in view of Ives (US 5,445,162). Ives proposes a detection of biosignal with an MRI signal in parallel, in where the biosignal and the MRI signal are obtained alternately (col. 2 line 27-31). It would be obvious to one skilled in the art at the time of the invention to combine Ives with Kjaer in order to minimize noise pick-up and interference.

5. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kjaer as applied to claim 6 above, and further in view of Cohen (WO 02/13689 A2). Cohen discloses a method for reducing a contamination of an electric signal. To do this the estimated contaminating signal, which could be a heartbeat noise, is subtracted from the digital signal, such as an EEG signal (summary of the invention). It would be obvious to one with ordinary skill in the art at the time of the invention to combine Cohen with Kjaer in order to further the utility of Kjaer to obtain clear EEG signals.

6. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kjaer in view of Cohen as applied to claim 9 above, and further in view of Humphrey (US 6,171,239 B1). Humphrey discloses reading neural signals using EEGs. Humphrey also discloses being able to determine a frequency of occurrence of neural spikes, which can be easily outputted on a display

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(col. 11 line 39-41). It would be obvious to one with ordinary skill in the art at the time of the invention to combine Humphrey with Kjaer and Cohen as once EEG signals are being read it would be obvious and easy to keep track of a frequency of occurrence and display such information.

### *Conclusion*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacqueline Cheng whose telephone number is 571-272-5596. The examiner can normally be reached on M-F 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on 571-272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC

  
ELENI MANTIS MERCADER  
SUPERVISORY PATENT EXAMINER